Treating to a Higher Standard

Erie, Colo., North Water Reclamation Facility
Provides New Water Source
The town of Erie, Colo., has seen significant and sustained growth over the past 10 years, with the population growing threefold from approximately 6,200 in 2000 to more than 19,000 today.

The growth is expected to continue with estimates reaching as high as 40,000 residents by 2025. The growth — and the strain it placed on the town’s existing 1.6 million gallon per day (MGD) South Water Reclamation Facility (SWRF) — forced town officials to take a hard look at how to plan for future wastewater needs of this budding bedroom community near Denver.

**Eye on the Future**
The obvious answer to the problem was increased capacity to meet both the immediate needs and expected future growth. Planning studies determined a new 1.5 MGD facility, the North Water Reclamation Facility (NWRF) could provide reclaimed water and biosolids for beneficial reuse in the town’s other public services divisions.

The population growth has been heaviest in the northern and northeastern parts of town, and that’s where growth is expected to continue over the next several years. By locating the new facility in the area of the heaviest growth, the town could also relieve concerns about its SWRF and use a more efficient design.

"Our old plant is close to downtown, and we were concerned about odor and having a big wastewater plant near the area," says Gary Behlen, Public Works Director for the town of Erie. "We chose the site in the northern part of town so we could utilize gravity flow to provide wastewater to the facility."

The SWRF is now offline for maintenance work and will be ready to return to active service when needed.

"Having the new reclamation facility gives us a lot of flexibility in the future," Behlen says.

**Beneficial Reuse**
The NWRF does more than meet a capacity need. It also provides a state-of-the-art solution for reducing wastewater impact on the environment.

The facility uses biological treatment techniques to reduce nutrient levels in the water to be returned to Boulder Creek, a main water supply for several downstream entities, while also treating water to appropriate levels for use in industrial, commercial and landscape irrigation. The reclaimed water will flow to an on-site reclaimed water storage reservoir for subsequent usage in the town’s reclaimed water system.

"It’s more efficient for us to process wastewater to a higher standard, store it, and reuse it as reclaimed water instead of discharging all of the flow to Boulder Creek," Behlen says. "And it’s a method for us to help preserve our resources and be more sustainable."

The plant is also equipped with a technology to turn waste activated sludge (WAS) into a high-quality usable product. The waste solids generated in the biological treatment process are pumped as a liquid to a WAS tank where they are mixed and aerated before being deposited in a tank where lime slurry is added to increase the pH for nearly 24 hours. The mixture then goes through a rotary screen thickener to remove excess water and increase the solids concentration before being passed through a screw press with heat to remove more water and provide pasteurization.

"The NWRF is designed to process all biosolids to reach the U.S. Environmental Protection Agency’s Class A standards so the biosolids can be beneficially reused in parks and other areas," says Darin Brickman, water practice manager for the Rocky Mountain Region, working out of the Burns & McDonnell Denver office. "The town of Erie clearly executed a plan to be stewards of the environment and provide a long-term solution to its water and wastewater needs."

For more information, contact Darin Brickman, 303-474-2244.